

REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of March 14, 2008 is respectfully requested.

By this Amendment, claims 1, 9 and 10 have been amended. Thus, claims 1-4, 7, 9 and 10 are currently pending in the application. No new matter has been added by these amendments.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1, 2, 4 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,135,727 to Dreiman et al. in view of U.S. Pat. No. 6,012,423 to Fischer.

Applicants respectfully submit that claims 1, 2, 4 and 7 are patentable over the combination of references for the following reasons.

Amended independent claim 1 recites, *inter alia*, a hermetic compressor which includes a compressing element comprising a shaft having an eccentric shaft portion, a spindle portion provided at a bottom surface of the eccentric shaft portion, and an auxiliary shaft portion provided at a top surface of the eccentric shaft portion so as to be coaxial with the spindle portion....wherein a first balance weight is provided on the auxiliary shaft portion at a top end of the eccentric shaft portion, and wherein the first balance weight is coupled to the auxiliary shaft portion by a separate member, having a head portion and a base portion whose diameter is smaller than the head portion, the auxiliary shaft portion is provided with a hole through which the base portion passes, and the separate member is arranged between the first balance weight and the auxiliary shaft portion so that the base portion is fixed with the first balance weight and the head portion is in contact with the auxiliary shaft portion [*emphasis added*].

Dreiman et al. discloses a detachably affixed counterweight and method of assembly. Figs. 2 and 3 show a crankshaft 42 having a cylindrical eccentric 82, a counterweight 92 provided at a bottom surface of cylindrical eccentric 82, and a shaft portion 96 provided at a top surface of the cylindrical eccentric 82...wherein a counterweight 106 is provided on shaft 96 at a top end of the cylindrical eccentric 82, and wherein the counterweight 106 is detachably affixed to the shaft 96. Counterweight 106 is comprised of base portion 108 and insert portion 110. Base portion 108 is disposed about shaft portion 96 in a straddling fashion, with flat shaft

surfaces 98, 100 slidably contacting flat parallel surfaces 118, 120 of arms 112, 114 of base portion 108. Insert portion 110 is provided with a pair of countersunk holes 138 which align with tapped holes 140 provided in base portion 108. Screws 142 are inserted into holes 138 and are threadedly engaged with tapped holes 140 to couple base portion 108 to insert portion 110.

Applicants respectfully submit that Dreiman et al. fails to disclose a spindle portion as recited in amended claim 1. Instead, the counterweight portion 92 referred to by the Examiner as a spindle portion, is integrally cast and machined into the crankshaft 42, and is adjacent eccentric 82. In column 3, line 58 to column 4, line 23, Dreiman et al. discusses that cylindrical eccentric 82 has a central axis 84 which is radially offset by a distance e from the crankshaft axis of rotation 86. Thus, the shaft 96 which is provided at a top surface of the cylindrical eccentric 82 is not coaxial with any spindle portion or with the counterweight 92 as required by amended claim 1.

Further, as admitted by the Examiner on pages 3 and 4 of the Office Action, Dreiman et al. fails to disclose a separate member for coupling a first balance weight or counterweight 92 to an auxiliary shaft or shaft 96 as required by claim 1. Instead, in Dreiman et al. screws 142 couple the two portions that comprise counterweight 106 together, namely, base portion 108 and insert portion 110.

The Examiner cites Fischer in an attempt to cure the deficiencies of Dreiman et al. Fischer teaches a hypocycloidal crank mechanism for piston engines, particularly for internal-combustion engines with opposed cylinder banks. Mutually opposite compensating weights 24, 24' are detachably arranged on a guiding eccentric 6, and each has an internal screw thread 25, 25' and one stud 26, 26'. Similar to Dreiman et al., the two weights 24 and 24' in Fischer are coupled to each other and there is no separate member for coupling either of the weights to an auxiliary shaft.

In contrast, in amended claim 1 of the present invention, a first balancing weight 130 is coupled to an auxiliary shaft portion 113 by a separate member 131, 151 as shown for example in Figures 3-7. In addition, the separate member 131, 151 has a head portion and a base portion whose diameter is smaller than the diameter of the head portion. Further, the auxiliary shaft portion 113 is provided with a hole 113a through which the base portion passes. Furthermore, the separate member 131, 151 is arranged between the first balancing weight 130 and the

auxiliary shaft portion 113 so that the base portion is fixed with the first balance weight 130 and the head portion is in contact with the auxiliary shaft portion 113.

Applicants respectfully submit that Fischer fails to cure the deficiencies of Dreiman et al. regarding a spindle portion and a separate member as recited in amended claim 1. Instead, like Dreiman et al., since there is no discussion anywhere in the Fischer reference of a spindle portion or an auxiliary shaft provided at a top surface of any of the eccentrics 5, 6 or 5', there is no shaft that is coaxial with a spindle portion. Only bearings 16, 16' and 17 are discussed in Fischer. Also, in contradistinction, the screw threads 25, 25' and studs 26, 26' cannot possibly couple either of the weights 24 and 24' to an auxiliary shaft portion because it appears that they are merely coupled to bushes 18, 18' by passing through bearing pins 19.

In addition, with respect to the Examiner's statements on page 4 of the Office Action, even *assuming arguendo* that putting two pieces together only involves routine skill in the art, the Examiner has failed to prove a *prima facie* case of obviousness concerning an auxiliary shaft portion provided at a top surface of an eccentric shaft portion so as to be coaxial with a spindle portion...wherein a first balance weight provided on the auxiliary shaft portion is coupled to the auxiliary shaft portion by a separate member, having a head portion and a base portion, so that the base portion is fixed with the first balance weight and the head portion is in contact with the auxiliary shaft portion.

Accordingly, it is respectfully submitted that the combination of references does not render independent claim 1 obvious.

Further, regarding claim 3, Applicants traverse the finding that it is well-known to use a rivet to connect two elements (namely, a rivet being arranged between a first balance weight and an auxiliary shaft portion as recited in amended claim 1) instead of screws. In particular, Applicants respectfully submit that the Examiner has made an error because a rivet connects two elements in a different manner than a screw and the "noticed fact" is not considered to be common knowledge or well-known in the art. Accordingly, Applicants request that the Examiner produce authority for his statement and provide documentary evidence in the next Office action if the rejection is to be maintained.

Furthermore, regarding claims 9 and 10, Applicants respectfully submit that a *prima facie* case of obviousness based on the claimed ranges has not been met because the feature regarding

the distance between a top/bottom end of the sliding portion and a top/bottom end of the auxiliary shaft portion of less than 1/2 of a diameter of the hole, is critical and achieves unexpected results relative to the prior art. As discussed on at least pages 10 and 11 of the specification, by separating a sliding portion 140 from two ends 140b of an auxiliary shaft portion by at least no less than 1/2 of the diameter of through hole 113a, it becomes possible to maintain the clearance between auxiliary shaft portion 113 and auxiliary bearing 119 constant, without hardly any deformation up to the sliding portion 140, even if the auxiliary shaft portion 113 is deformed with fastening of screw 131. Besides, the Examiner has not provided a reference that discusses the claimed range.

Therefore, amended independent claim 1, as well as claims 2-4, 7, 9 and 10 which depend therefrom, are clearly allowable over the prior art of record. Applicants respectfully request that the rejections under 35 USC 103(a) be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice to that effect is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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